

Application No. 10/783,597
Amendment "A" dated September 1, 2005
Reply to Office Action mailed April 5, 2005

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A ~~tray-shaped dental treatment device~~ dental treatment system for use in applying a treatment composition to a person's teeth, comprising:

a moisture-resistant barrier layer having a front side wall and a bottom wall, and that is adapted to be worn over at least a portion of a person's upper or lower dental arch without requiring customization prior to wearing, the barrier layer comprising a thin-walled, flexible membrane material that is adapted to at least partially conform to the person's teeth when placed over a patient's teeth to apply the treatment composition;

said ~~barrier layer~~ ~~bottom wall~~ comprising one or more anatomical features that facilitate the ability of the barrier to conform to the patient's teeth when worn for treatment including a plurality of cuts positioned so as to help said ~~bottom wall~~ better conform to abrupt changes in the diameter of a person's teeth where the bicuspids and canines meet; and

a support skeleton positioned adjacent to the barrier layer prior to placement over the patient's teeth so as to maintain the thin-walled flexible membrane material in a tray-like configuration to facilitate placement of the barrier layer when forming the treatment tray by its placement over the person's teeth; and

a dental treatment composition placed onto the barrier layer prior to its placement over the patient's teeth.

2. (Currently Amended) A tray-shaped dental treatment device as recited in claim 1, wherein said support skeleton comprises further comprising an exoskeleton having a tray-like configuration configured to receive said moisture-resistant barrier layer.

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3. (Original) A tray-shaped dental treatment device as recited in claim 2, wherein said exoskeleton includes a handle.
4. (Currently Amended) A tray-shaped dental treatment device as recited in claims 1 or 21, wherein said one or more anatomical features comprise a plurality of cuts positioned so as to help said bottom wall better conform to abrupt changes in the diameter of a person's teeth where the bicuspid and canines meet, and wherein each of said cuts comprises a notch.
5. (Cancelled)
6. (Cancelled)
7. (Original) A tray-shaped dental treatment device as recited in claim 1, wherein said dental treatment composition comprises at least one of a sticky viscous gel, a less viscous gel, a highly viscous putty, or a substantially solid composition.
8. (Original) A tray-shaped dental treatment device as recited in claim 7, wherein the dental treatment composition includes at least one tissue adhesion agent.
9. (Original) A tray-shaped dental treatment device as recited in claim 8, wherein said dental treatment composition further includes at least one active agent.
10. (Original) A tray-shaped dental treatment device as recited in claim 9, said active agent comprising at least one of a dental bleaching agent, a desensitizing agent, a remineralizing agent, an antimicrobial agent, an antiplaque agent, an anti-tartar agent, or another medicament.
11. (Original) A tray-shaped dental treatment device as recited in claim 8, said tissue adhesion agent comprising polyvinyl pyrrolidone.

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12. (Original) A tray-shaped dental treatment device as recited in claim 8, said tissue adhesion agent comprising at least one of carboxypolymethylene, polyethylene oxide, polyacrylic acid, copolymer of polyacrylic acid, polyacrylate, polyacrylamide, copolymer of polyacrylic acid and polyacrylamide, PVP-vinyl acetate copolymer, carboxymethylcellulose, carboxypropylcellulose, polysaccharide gum, and protein.
13. (Original) A tray-shaped dental treatment device as recited in claim 8, said tissue adhesion agent having a concentration in a range of about 10% to about 90% by weight of said treatment composition.
14. (Original) A tray-shaped dental treatment device as recited in claim 8, said tissue adhesion agent having a concentration in a range of about 20% to about 80% by weight of said treatment composition.
15. (Original) A tray-shaped dental treatment device as recited in claim 8, said tissue adhesion agent having a concentration in a range of about 40% to about 75% by weight of said treatment composition.
16. (Original) A tray-shaped dental treatment device as recited in claim 8, wherein the treatment composition comprises a substantially solid adhesive composition and at least one of a sticky viscous gel, a less viscous gel, or a highly viscous putty adjacent to at least one of said adhesive composition or said barrier layer.
17. (Original) A tray-shaped dental treatment device as recited in claim 1, wherein said device is contained within a sealed package prior to use.
18. (Currently Amended) A tray-shaped dental treatment device as recited in claims 1 or 21, wherein said one or more anatomical features comprises~~further comprising~~ a notch in said bottom wall so as to help said tray-shaped dental treatment device to more easily spread open or compress in the area of a person's incisors.

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19. (Currently Amended) A tray-shaped dental treatment device as recited in claims 1 or 21, wherein said one or more anatomical features comprises ~~further comprising~~ at least one V-shaped or U-shaped indentation in said bottom wall configured to be inserted into the depression typically found along the top surfaces of a person's molars.

20. (Currently Amended) A tray-shaped dental treatment device as recited in claims 1 or 21, wherein said one or more anatomical features comprise ~~front side wall and bottom wall include~~ radii of curvature on the front side wall and bottom wall that account for typical flaring of a patient's incisors.

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21. (Currently Amended) A ~~tray-shaped dental treatment device~~ dental treatment system for use in applying a treatment composition to a person's teeth, comprising:

a moisture-resistant barrier layer having a front side wall and a bottom wall, and that is adapted to be worn over at least a portion of a person's upper or lower dental arch without requiring customization prior to wearing, the barrier layer comprising a thin-walled, flexible membrane material that is adapted to at least partially conform to the person's teeth when placed over a patient's teeth to apply the treatment composition;

said ~~barrier layer~~ bottom wall comprising one or more anatomical features that facilitate the ability of the barrier to conform to the patient's teeth when worn for treatment including a plurality of cuts positioned so as to help said bottom wall better conform to abrupt changes in the diameter of a person's teeth where the bicusps and canines meet;

a support skeleton positioned adjacent to the barrier layer prior to placement over the patient's teeth so as to maintain the thin-walled flexible membrane material in a tray-like configuration to facilitate placement of the barrier layer when forming the treatment tray by its placement over the person's teeth; and

a substantially solid adhesive composition that has increased adhesiveness to teeth when moistened with saliva or water, said adhesive composition including;

at least one active agent; and

at least one tissue adhesion agent that contributes or provides increased adhesiveness to oral tissue when moistened with saliva; and

at least one of a sticky viscous gel, a less viscous gel, or a highly viscous putty adjacent to at least one of said barrier layer or said adhesive composition.

22. (Currently Amended) A tray-shaped dental treatment device as recited in claim 21, wherein said support skeleton comprises ~~further comprising~~ an exoskeleton having a tray-like configuration configured to receive said moisture-resistant barrier layer.

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23. (Original) A tray-shaped dental treatment device as recited in claim 21, said barrier layer comprising a mixture of ethyl vinyl acetate and polypropylene.
24. (Original) A tray-shaped dental treatment device as recited in claim 23, said barrier layer comprising up to 50% polypropylene by weight.
25. (Original) A tray-shaped dental treatment device as recited in claim 23, said barrier layer comprising about 5% to about 40% polypropylene by weight.
26. (Original) A tray-shaped dental treatment device as recited in claim 23, said barrier layer comprising about 10% to about 30% polypropylene by weight.
27. (Original) A tray-shaped dental treatment device as recited in claim 21, said barrier layer comprising at least one polyolefin.
28. (Original) A tray-shaped dental treatment device as recited in claim 27, said polyolefin comprising at least one of polyethylene, high density polyethylene, low density polyethylene, ultra-low density polyethylene, polypropylene, or polytetrafluoroethylene.
29. (Original) A tray-shaped dental treatment device as recited in claim 21, said barrier layer comprising at least one of wax, metal foil, paraffin, ethylene-vinyl acetate copolymer, ethylene-vinyl alcohol copolymer, polycaprolactone, polyester, polycarbonate, polyurethane, polyamide, or polyesteramide.
30. (Original) A tray-shaped dental treatment device as recited in claim 21, wherein said barrier layer has a cross-sectional thickness in a range of about 0.025 mm to about 1.5 mm.

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31. (Original) A tray-shaped dental treatment device as recited in claim 21, wherein said barrier layer is sized and configured so as to approximately terminate at or near a person's gingival margin when said tray-shaped dental treatment device is in use.

32. (Original) A tray-shaped dental treatment device as recited in claim 21, said at least one sticky viscous gel, less viscous gel, or highly viscous putty includes a dental bleaching agent.

33. (Original) A tray-shaped dental treatment device as recited in claim 32, said dental bleaching agent comprising at least one of carbamide peroxide, metal peroxide, percarbonate, perborate, peroxy acid, peroxy acid salt, chlorite, or hypochlorite.

34. (Original) A tray-shaped dental treatment device as recited in claim 32, said dental bleaching agent having a concentration in a range of about 5% to about 80% by weight of said at least one sticky viscous gel, less viscous gel, or highly viscous putty.

35. (Original) A tray-shaped dental treatment device as recited in claim 32, said dental bleaching agent having a concentration in a range of about 10% to about 60% by weight of said at least one sticky viscous gel, less viscous gel, or highly viscous putty.

36. (Original) A tray-shaped dental treatment device as recited in claim 32, said dental bleaching agent having a concentration in a range of about 20% to about 50% by weight of said at least one sticky viscous gel, less viscous gel, or highly viscous putty.

37 - 49 (Cancelled)